WHAT IS CLAIMED IS:

1. One or more noncovalent complexes, each complex comprising a heat shock protein, an antigenic molecule, and a lectin, wherein said heat shock protein and/or antigenic molecule is/are glycosylated, and wherein the amount of lectin present in said complexes relative to the amount of heat shock protein is greater than or equal to 40 nanograms lectin per microgram of heat shock protein.

2. The complexes of claim 1, wherein the lectin present in said complexes relative to the amount of heat shock protein is 50 nanograms lectin per microgram of heat shock protein to 1000 nanograms lectin per microgram of heat shock protein.

3. The complexes of claim 1, wherein the lectin present in said complexes relative to the amount of heat shock protein is 100 nanograms lectin per microgram of heat shock protein to 500 nanograms lectin per microgram of heat shock protein.

4. One or more noncovalent complexes, each complex comprising a heat shock protein, an antigenic molecule, and a lectin, wherein said heat shock protein and/or antigenic molecule is/are glycosylated, and wherein the amount of lectin present in said complexes relative to the amount of heat shock protein is less than or equal to 5 nanograms lectin per microgram of heat shock protein.

5. The complexes of claim 4, wherein the lectin present in said complexes relative to the amount of heat shock protein is 0.1 nanograms lectin per microgram of heat shock protein to 1 nanograms lectin per microgram of heat shock protein.

6. The complexes of claim 4, wherein the lectin present in said complexes relative to the amount of heat shock protein is 0.5 nanograms lectin per microgram of heat shock protein to 1 nanograms lectin per microgram of heat shock protein.

7. The complexes of any of claims 1 to 6, wherein said lectin is a mannose binding lectin.

8. The complexes of claim 7, wherein said mannose-binding lectin is Concanavalin A (Con A).

9. The complexes of any of claims 1 to 6, wherein said heat shock protein is gp96.

10. The complexes of any of claims 1 to 6, wherein the noncovalent complexes are purified.

11. A method of making a population of noncovalent complexes which comprise heat shock proteins, antigenic molecules, and lectins, wherein said heat shock proteins are glycosylated, said method comprising the steps of :

a) binding said lectins to said heat shock proteins; and

b) complexing said heat shock proteins to antigenic molecules.

12. A method of making a population of noncovalent complexes that comprise heat shock proteins, antigenic molecules, and lectins, wherein said heat shock proteins and/or antigenic molecules are glycosylated, said method comprising binding a lectin to one or more complexes, each complex comprising a heat shock protein and an antigenic molecule, wherein said lectin is not bound to a solid phase.

13. The method of claim 12, further comprising isolating said complex of heat shock protein and antigenic molecule by lectin-based affinity chromatography prior to binding said complex to lectins.

14. The method of claim 12, further comprising isolating said complex of heat shock protein and antigenic molecule by non-lectin based chromatography prior to binding said complex to said lectin.

15. The method of claim 14, wherein said non-lectin based chromatography is antibody-based affinity chromatography.

16. One or more molecular complexes that are the product of the process of any of claims 11 to 14, wherein the amount of lectin present in said composition relative to the amount of heat shock protein is greater than or equal to 40 nanograms lectin per microgram of heat shock protein.

17. One or more molecular complexes that are the product of the process of any of claims 11 to 15, wherein the amount of lectin present in said composition relative to the amount of heat shock protein is less than or equal to 5 nanograms lectin per microgram of heat shock protein

18. The method of any of claims 11-15, wherein said lectin is a mannose-binding lectin.

19. The method of claim 18, wherein said mannose-binding lectin is Concanavalin A (Con A).

20. The method of any of claims 11-15, wherein said heat shock protein is gp96.

21. The method of any of claims 12-15, wherein said complexes of heat shock proteins and antigenic molecules are obtained from cancerous tissue.

22. The molecular complexes of claim 16 or 17 that are purified.

23. A pharmaceutical composition comprising a pharmaceutically acceptable carrier, and one or more complexes of a heat shock protein, an antigenic molecule, and a lectin, wherein said heat shock protein and/or antigenic molecule is/are glycosylated, and wherein the lectin present in said composition relative to the amount of heat shock protein is greater than 40 nanograms per microgram of heat shock protein.

24. The pharmaceutical composition of claim 23, wherein the lectin present in said composition relative to the amount of heat shock protein is between 50 nanograms lectin per microgram of heat shock protein to 1000 nanograms lectin per microgram of heat shock protein.

25. A pharmaceutical composition comprising a pharmaceutically acceptable carrier, and one or more complexes of a heat shock protein, an antigenic molecule, and a lectin, wherein said heat shock protein and/or antigenic protein is/are glycosylated, and wherein the lectin present in said composition relative to the amount of heat shock protein is less than 5 nanograms per microgram of heat shock protein.

26. The pharmaceutical composition of claim 25, wherein the lectin present in said composition relative to the amount of heat shock protein is between 0.1 nanograms lectin per microgram of heat shock protein to 1 nanograms lectin per microgram of heat shock protein

27. The pharmaceutical composition of any of claims 23 to 26, wherein the molecular complex is present in an amount effective for treatment or prevention of cancer or an infectious disease.

28. The pharmaceutical composition of any of claims 23 to 26, wherein said lectin is a mannose-binding lectin.

29. The pharmaceutical composition of claim 28, wherein said mannose-binding lectin is Concanavalin A (Con A).

30. The pharmaceutical composition of any of claims 23 to 26, wherein said heat shock protein is gp96.

31. A method of preventing or treating a type of cancer or an infectious disease comprising administering to a subject having cancer or an infectious disease a therapeutically effective amount of a composition comprising a population of noncovalent complexes, each complex comprising a heat shock protein, an antigenic molecule that displays the antigenicity of an antigen of said cancer or of an agent of said infectious disease, and a lectin, wherein said heat shock protein and/or antigenic molecule is/are glycosylated, and wherein the amount of lectin present in said composition relative to the amount of heat shock protein is greater than or equal to 40 nanograms lectin per microgram of heat shock protein.

32. The method of claim 31, wherein the lectin present in said composition relative to the amount of heat shock protein is between 50 nanograms lectin per microgram of heat shock protein to 1000 nanograms lectin per microgram of heat shock protein.

33. A method of preventing or treating a type of cancer or an infectious disease comprising administering to a subject having cancer or an infectious disease a therapeutically effective amount of a composition comprising a population of noncovalent complexes which comprise a heat shock protein, an antigenic molecule that displays the antigenicity of an antigen of said cancer or of an agent of said infectious disease, and a lectin, wherein said heat shock protein and/or antigenic molecule is/are glycosylated, and wherein the amount of lectin present in said composition relative to the amount of heat shock protein is less than or equal to 5 nanograms lectin per microgram of heat shock protein.

34. The method of claim 33, wherein the lectin present in said composition relative to the amount of heat shock protein is between 0.1 nanograms lectin per microgram of heat shock protein to 1 nanograms lectin per microgram of heat shock protein

35. A method of preventing or treating a type of cancer or an infectious disease

comprising administering to a subject having cancer or an infectious disease a therapeutically effective amount of a pharmaceutical composition comprising a pharmaceutically acceptable carrier, and one or more complexes of a heat shock protein, an antigenic molecule that displays the antigenicity of an antigen of said cancer or of an agent of said infectious disease, and a lectin, wherein said heat shock protein and/or antigenic protein is/are glycosylated, and wherein the lectin present in said composition relative to the amount of heat shock protein is greater than or equal to 40 nanograms per microgram of heat shock protein

36. The method of claim 35, wherein the lectin present in said composition relative to the amount of heat shock protein is between 50 nanograms lectin per microgram of heat shock protein to 1000 nanograms lectin per microgram of heat shock protein.

37. A method of preventing or treating a type of cancer or an infectious disease comprising administering to a subject having cancer or an infectious disease a therapeutically effective amount of a pharmaceutical composition comprising a pharmaceutically acceptable carrier, and one or more complexes of a heat shock protein, an antigenic molecule that displays the antigenicity of an antigen of said cancer or of an agent of said infectious disease, and a lectin, wherein said heat shock protein and/or antigenic protein is/are glycosylated, and wherein the lectin present in said composition relative to the amount of heat shock protein is less than or equal to 5 nanograms per microgram of heat shock protein.

38. The method of claim 37, wherein the lectin present in said composition relative to the amount of heat shock protein is between 0.1 nanograms lectin per microgram of heat shock protein to 1 nanograms lectin per microgram of heat shock protein

39. The method of any of claims 31-38, wherein said lectin is a mannose-binding lectin.

40. The method of claim 39, wherein said mannose-binding lectin is Concanavalin A (Con A).

41. The method of any of claims 31-38, wherein said heat shock protein is gp96.

42. The method of any of claims 31-38, wherein said subject is a mammal.

43. The method of claim 42, wherein said mammal is a human.

44. The method of any of claims 31-38, wherein said heat shock protein and said antigenic molecule are a purified noncovalent complex isolated from cancerous tissue.

45. The method of any of claims 31-38, wherein the molecular complexes are purified.

46. A kit comprising:

a) a first container containing a composition comprising a population of noncovalent complexes, each complex comprising a heat shock protein and an antigenic molecule, wherein the heat shock protein and/or antigenic molecule are glycosylated; and

b) a second container containing purified lectin.

47. The kit of claim 46, wherein the antigenic molecule displays antigenicity of an antigen of a type of cancer or of an antigen of an agent of an infectious disease.

48. The kit of claim 46, wherein the lectin is a mannose-binding lectin.

49. The kit of claim 48, wherein the mannose-binding lectin is Concanavalin A (Con A).

50. The kit of claim 46, wherein the heat shock protein is gp96.

51. One or more noncovalent complexes, each complex comprising a lectin and a biologically active glycoprotein, wherein the amount of lectin present in said complexes relative to the amount of glycoprotein is greater than or equal to 40 nanograms lectin per microgram of glycoprotein.

52. The complexes of claim 51, wherein the lectin present in said complexes relative to the amount of glycoprotein is 50 nanograms lectin per microgram of glycoprotein to 1000 nanograms lectin per microgram of glycoprotein.

53. One or more noncovalent complexes, each complex comprising a lectin and a biologically active glycoprotein, wherein the amount of lectin present in said complexes relative to the amount of glycoprotein is less than or equal to 5 nanograms lectin per microgram of glycoprotein.

54. The complexes of claim 53, wherein the lectin present in said complexes

relative to the amount of glycoprotein is 0.1 nanograms lectin per microgram of glycoprotein to 1 nanograms lectin per microgram of glycoprotein.

55. The complexes of any of claims 51-54, wherein said glycoprotein is an antigenic molecule that displays one or more antigenic determinants against which an immune response is desired in a subject.

56. The complexes of any of claims 51 to 54, wherein said lectin is a mannose binding lectin.

57. The complexes of claim 56, wherein said mannose binding lectin is Concanavalin A (Con A).

58. The complexes of any of claims 51 to 54, wherein the noncovalent complexes are purified.

59. A pharmaceutical composition comprising a pharmaceutically acceptable carrier, and one or more complexes of any of claims 51-54.

60. The pharmaceutical composition of claim 59, wherein the complexes are present in an amount effective for treatment or prevention of cancer, an infectious disease, anemia, growth hormone deficiency disorder, enzyme deficiency disorder, or a condition of immune suppression.

61. A method of delivering a glycoprotein to a desirable site or a desirable cell type in a subject comprising administering one or more molecular complexes, wherein each complex comprises a lectin and a glycoprotein, and wherein the amount of lectin present in said complexes relative to the amount of glycoprotein is greater than or equal to 40 nanograms lectin per microgram of glycoprotein.

62. A method of delivering a glycoprotein to a desirable site or a desirable cell type in a subject comprising administering one or more molecular complexes, wherein each complex comprises a lectin and a glycoprotein, and wherein the amount of lectin present in said complexes relative to the amount of glycoprotein is less than or equal to 5 nanograms lectin per microgram of glycoprotein.

63. The method of claim 61 or 62, wherein said glycoprotein is an antigenic molecule that displays one or more antigenic determinants against which an immune

response is desired in a subject.

64. The method of claim 61 or 62, wherein said lectin is a mannose binding lectin.

65. The method of claim 64, wherein said mannose binding lectin is Concanavalin A (Con A).

66. The method of claim 61 or 62, wherein the molecular complexes are purified.

67. The method of claim 61 or 62, wherein the subject is a human.

68. A purified complex comprising a lectin and a biologically active glycoprotein, with the proviso that said glycoprotein does not comprise an heat shock protein.

69. A pharmaceutical composition comprising a therapeutically effective amount of the complex of claim 68, and a pharmaceutically acceptable carrier, wherein said biologically active glycoprotein is a therapeutic.

70. A method of delivering a therapeutic to a patient comprising administering to the patient the pharmaceutical composition of claim 69.